

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (withdrawn): An isolated polynucleotide comprising a sequence selected from the group consisting of: SEQ ID NO: 1-12 and 25.

Claim 2 (withdrawn): An isolated polynucleotide comprising a sequence selected from the group consisting of:

- (a) complements of SEQ ID NO: 1-12 and 25;
- (b) reverse complements of SEQ ID NO: 1-12 and 25;
- (c) reverse sequences of SEQ ID NO: 1-12 and 25;
- (d) sequences that are 100-mers of a sequence of SEQ ID NO: 1-12 and 25;
- (e) sequences that are 40-mers of a sequence of SEQ ID NO: 1-12 and 25; and
- (f) sequences that are 20-mers of a sequence of SEQ ID NO: 1-12 and 25.

Claim 3 (withdrawn): An isolated polynucleotide comprising a sequence selected from the group consisting of:

- (a) sequences having at least 75% identity to a sequence of SEQ ID NO: 1-12 and 25;
- (b) sequences having at least 90% identity to a sequence of SEQ ID NO: 1-12 and 25;
- (c) sequences having at least 95% identity to a sequence of SEQ ID NO: 1-12 and 25;
- (d) sequences having at least 98% identity to a sequence of SEQ ID NO: 1-12 and 25;
and
- (e) sequences that hybridize to a sequence of SEQ ID NO: 1-12 and 25 under stringent hybridization conditions,

wherein the polynucleotide encodes a polypeptide having substantially the same functional properties as a polypeptide encoded by SEQ ID NO: 1-12 or 25.

Claim 4 (withdrawn): An isolated oligonucleotide probe or primer comprising at least 10 contiguous residues complementary to 10 contiguous residues of a nucleotide sequence recited in claim 1.

Claim 5 (withdrawn): A kit comprising a plurality of oligonucleotide probes or primers of claim 4.

Claim 6 (previously presented): An isolated polypeptide encoded by SEQ ID NO: 3.

Claim 7 (previously presented): An isolated polypeptide comprising SEQ ID NO: 15.

Claim 8 (original): The isolated polypeptide of claim 7, wherein the polypeptide is in multimeric form.

Claim 9 (currently amended): An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

- (a) ~~sequences having at least 75% identity to SEQ ID NO: 15;~~
- (b) ~~—~~sequences having at least 90% identity to SEQ ID NO: 15;
- (e) (b) sequences having at least 95% identity to SEQ ID NO: 15; and
- ~~(d)~~ (c) sequences having at least 98% identity to SEQ ID NO: 15; ~~and~~
- (e) ~~—functional portions of SEQ ID NO: 15,~~

wherein the polypeptide possesses an ability to bind ice crystals.

Claims 10-17 (cancelled).

Claim 18 (withdrawn): A method for modulating cold tolerance in an organism, comprising stably incorporating into the genome of the organism at least one polynucleotide of any one of claims 1-3.

Claim 19 (withdrawn): The method of claim 18, wherein the organism is selected from the group consisting of: plants; mammals; insects; fungi; archaea; and bacteria.

Claims 20-23 (cancelled).

Claim 24 (withdrawn): A method for modifying the activity of an antifreeze protein in an organism, comprising introducing into cells of the organism double stranded RNA corresponding to a polynucleotide of any one of claims 1-3, thereby inhibiting expression of a polypeptide encoded by the polynucleotide.

Claim 25 (currently amended): A method for cryopreserving a cell or tissue, comprising contacting the cell or tissue with at least one polypeptide of any one of claims ~~6-9~~ 6-8.

Claim 26 (currently amended): A food additive comprising a polypeptide of any one of claims ~~6-9~~ 6-8.

Claim 27 (previously presented): A frozen food product comprising a food additive of claim 26.

Claim 28 (currently amended): A method for decreasing an amount of time required to dehydrate a composition comprising contacting the composition with a polypeptide of any one of claims ~~6-9~~ 6-8.

Claim 29 (currently amended): A composition comprising a polypeptide of any one of claims ~~6-9~~ 6-8 and a physiologically acceptable carrier.

Claim 30 (withdrawn): A method for the treatment of a disorder characterized by the presence of unwanted biocrystals in a patient, comprising administering to the patient a composition of claim 29.

Claim 31 (currently amended): A method for preserving the viability of a molecular biology reagent, comprising contacting the reagent with a polypeptide of any one of claims ~~6-9~~ 6-8.

Claim 32 (withdrawn): A method for destroying unwanted tissue in a patient, comprising:

- (a) perfusing the tissue with a solution comprising a polypeptide of any one of claims 7-9; and
- (b) freezing the tissue for a period of time sufficient to mortally damage cells within the tissue.

Claim 33 (withdrawn): The method of claim 32, wherein the undesirable tissue is tumor tissue.

Claim 34 (currently amended): A composition comprising at least one polypeptide of any one of claims ~~6-9~~ 6-8 and an agricultural carrier.

Claim 35 (original): A method for protecting a plant from damage due to frost or freezing, comprising applying a composition of claim 34 to the plant.

Claim 36 (new): A food additive comprising a polypeptide of claim 9.

Claim 37 (new): A frozen food product comprising a food additive of claim 37.

Claim 38 (new): A composition comprising a polypeptide of claim 9 and a physiologically acceptable carrier.

Claim 39 (new): A composition comprising a polypeptide of claim 9 and an agricultural carrier.